REMARKS

Reconsideration of this application is requested.

A page showing the changes made to the above-identified claims is attached hereto.

As a result of the foregoing amendments, a total of 54 claims remain in the present application. Original claims 1, 2, 14, 20, 21, and 41 have been amended. No new claims have been introduced. Claims 3-13, 14-19, 22-40 and 42-54 remain unchanged.

The foregoing amendments are presented in response to the Office Action mailed November 29, 2001, wherefore reconsideration is respectfully requested. Referring now to the text of the Office Action:

(a) claims 1-2, 21-22 and 41-42 stand rejected under 35 U.S.C. § 102(b), as being anticipated by United States Patent No. 5,636,230 (Marturano et al.); and

(b) claims 3-18, 23-38, and 43-52 also stand rejected in view of Marturano, although the Office Action does not specify whether or not this rejection is under 35 U.S.C. § 102 or § 103; and

(c) claims 19-20, 39-40, 53-54 are objected to as being dependent on a rejected base claim.

Such rejections are respectfully traversed, based on the discussion below.

As an initial matter, the Applicant appreciates the Examiner's indication of allowable subject matter in claims 19-20, 39-40, 53-54.

In response to the Applicant's arguments filed on May 5 2002, the Examiner asserts that "Marturano et al. disclosed temporary interrupting data transmission over the poorly performing wireless link until the adequate data blocks is received (col.4/ln. 8-49). Further, and with respect to claims 1-2, 21-22, and 41-42, the Examiner asserts that:

> "Marturano et al. disclose a base station (FIG. 1/no. 102-103, col 2/ ,ln 49) being adapted for communications with one of more wireless terminals (FIG. 1/no. 101, col 2/ ,ln 47) over a wireless link wherein the base station identify [sic] a poorly performing link and temporarily interrupting data transmission over the poorly performing wireless link (abstract, col. 2/ln. 58-col. 4/ln.15)."

Applicant acknowledges that Marturano et al teach broadcast network in which receiving units 102-103 are capable of detecting faulty data transmission from a transmitting unit 101 (by analyzing received data blocks for errors), and temporarily interrupting transmission of resend request (i.e. NACK) messages to the involved transmitting unit 101. However, applicant reaffirms that this teaching does not in any manner anticipate the present invention.

The present invention provides a system for controlling data traffic in a data communications network in which a base station is adapted for bi-directional data communications with a plurality of wireless terminals. Each wireless terminal is coupled to the base station via a respective bi-directional data communications link. According to the present invention, if a link is found to be performing poorly, bi-directional data transmission through that link is at least temporarily interrupted. This has the advantage of freeing band-width for other links, and reducing interference experienced by those other links.

As will be appreciated, Marturano et al also involves bi-directional data transmission. Thus, data blocks are broadcast from a transmitting unit 101 and received by one or more receiving units 102-103. Each receiving unit 102-103 analyzes received data blocks for errors, and, if an error is found, transmits a resend request message back to the "transmitting" unit 101. According to Marturano et al, a poorly performing transmission medium (or wireless environment) results in an excessive number of resend request messages being sent by the affected receiving unit 102-103. In this case, the involved receiving unit 102-103 temporarily suspends transmission of theresend request messages. However, throughout this process, and following suspension of resend request messages, the transmitting unit 101 continues to transmit data blocks. This, in fact, is the whole point of Marturano et al; to increase the efficiency of transmission of data messages (contained in the data bocks – see col.2, lines 45-46) by preventing the transmission of an inordinate number of resend requests. Marturano et al teach that the data

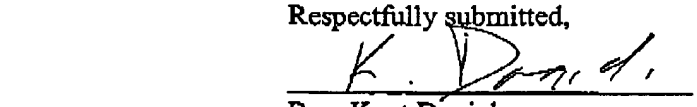
blocks transmitted after suspension of resend request messages can be used as a basis for re-enabling transmission of resend request messages. Thus it is clear that Marturano teaches directly away from the present invention by requiring that "data transmission" (of resend request messages) in one direction is suspended in order to enhance data transmission (of data messages) in the opposite direction. Marturano et al do not teach or suggest suspension of bi-directional data transmission (i.e. in both directions) as required by the present invention.

None of the known prior art teaches or suggests the missing subject matter. Accordingly, it is submitted that the present invention as defined in amended claims 1, 21 and 41 is clearly distinguishable over the prior art of record, and is patentable. The dependent claims 2-20, 22-40 and 42-54 are believed to define further patentable subject matter.

In light of the foregoing, it is submitted that the presently claimed invention is clearly and unambiguously distinguishable over the teachings of the cited references. Accordingly, it is believed that the present application is in condition for allowance, and early action in that respect is now courteously solicited.

If any extension of time under 37 C.F.R. § 1,136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,



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WE CLAIM:

1. [AMENDED] A method of controlling data traffic in a wireless data communications network comprising a plurality of wireless terminals and a base station, each wireless terminal being adapted for bi-directional data communication with the base station through a respective bi-directional ~~plurality of~~ wireless data communications link~~s~~, the method comprising ~~the~~ steps of:

   a) ~~systematically~~ examining performance of ~~the~~ each wireless link~~s~~ to identify a poorly performing wireless link; and

   b) at least temporarily interrupting bi-directional data transmission over the poorly performing wireless link.

2. [AMENDED] A method as claimed in claim 1, wherein the step of ~~systematically~~ examining performance of the wireless links ~~to identify a poorly performing wireless link~~ comprises steps of monitoring one or more performance parameters related to each wireless link, and comparing each monitored performance parameter to a respective predetermined threshold value.

3. A method as claimed in claim 2, wherein the one or more performance parameters related to each wireless link are based on any one or more of a quality-of-service (QOS), and interference on the wireless link.

4. A method as claimed in claim 3, wherein at least one of the performance parameters related to each wireless link is based on interference on the wireless link, and comprises any one or more of: a signal-to-noise (S/N) ratio; a user data throughput rate; a carrier-to-interference (C/I) ratio; a bit-error-rate (BER); and a number of suspended frames.

5. A method as claimed in claim 4, wherein at least one of the performance parameters related to each wireless link comprises an average, taken over a number n of successive bursts, of any one or more of the S/N ratio; the C/I ratio; the user data throughput rate; and the BER.

6. A method as claimed in claim 4, wherein the step of interrupting data transmission over the poorly performing wireless link comprises a step of suspending transmission of a data frame over the poorly performing wireless link.

7. A method as claimed in claim 6, further comprising a step of resuming transmission of the data frame after a delay period.

8. A method as claimed in claim 7, wherein the delay period is a period of random length.

9. A method as claimed in claim 5, further comprising maintaining a count of suspended frames.

10. A method as claimed in claim 9, further comprising suspending a communications session over the wireless

link if the count of suspended frames exceeds a predetermined threshold.

11. A method as claimed in claim 10, further comprising restarting the session after a delay period.

12. A method as claimed in claim 11, wherein the delay period is of random length.

13. A method as claimed in claim 3, wherein at least one of the performance parameters related to each wireless link is a QOS performance parameter comprising any one or more of a data transmission delay, and a number of dropped frames.

14. [AMENDED] A method as claimed in claim 13, wherein the step of interrupting data ~~communications~~ transmission over the poorly performing wireless link comprises a step of dropping a data frame transmitted over the poorly performing wireless link.

15. A method as claimed in claim 13, further comprising a step of re-transmitting the dropped frame after a delay period.

16. A method as claimed in claim 15, wherein the delay period is a period of random length.

17. A method as claimed in claim 13, further comprising maintaining a count of dropped frames.

18. A method as claimed in claim 17, further comprising dropping the session if the number of dropped frames exceeds a predetermined threshold.

19. A method as claimed in claim 13, wherein the step of monitoring a respective performance parameter respecting each wireless link comprises a step of predicting whether a QOS performance parameter is certain to violate a corresponding QOS requirement of a communications session on the link.

20. [AMENDED] A method as claimed in claim 19, wherein the step of interrupting data ~~communications~~ transmission over the poorly performing wireless link comprises a step of preemptively dropping a data frame being transmitted over the poorly performing wireless link.

21. [AMENDED] A wireless data communications network comprising a base station capable of bi-directional ~~wireless~~ data communication with each one of ~~one or more~~ a plurality of wireless ~~stations~~ terminals over respective bi-directional wireless data communications links, the network comprising:

a) computing means for identifying a poorly performing wireless link; and

b) control means adapted to at least temporarily interrupt bi-directional data transmission over the poorly performing wireless link.

22. A network as claimed in claim 21, wherein the computing means comprises means for monitoring one or more performance parameters related to each wireless link, and comparing each monitored performance parameter to a respective predetermined tolerance.

23. A network as claimed in claim 22, wherein the one or more performance parameters related to each wireless link are based on any one or more of a quality-of-service (QOS), and interference on the wireless link.

24. A network as claimed in claim 23, wherein at least one of the performance parameters related to each wireless link is based on interference on the link, and comprises any one or more of: a signal-to-noise (S/N) ratio; a carrier-to-interference (C/I) ratio; a bit-error-rate (BER); a user data throughput rate; and a number of suspended frames.

25. A network as claimed in claim 24, wherein at least one of the performance parameters related to each wireless link comprises an average, taken over a number n of successive bursts, of any one or more of the S/N ratio; the C/I ratio; the user data throughput rate; and the BER.

26. A network as claimed in claim 24, wherein the control means is adapted to suspend transmission of a data frame over the poorly performing wireless link.

27. A network as claimed in claim 26, further comprising means for resuming transmission of the data frame after a delay period.

28. A network as claimed in claim 27, wherein the delay period is a period of random length.

29. A network as claimed in claim 25, wherein the computing means is further adapted to maintain a count of suspended frames.

30. A network as claimed in claim 29, wherein the control means is adapted to suspend a communications session over the wireless link if the count of suspended frames exceeds a predetermined threshold.

31. A network as claimed in claim 30, further comprising means for restarting the session after a delay period.

32. A network as claimed in claim 31, wherein the delay period is of random length.

33. A network as claimed in claim 23, wherein at least one of the performance parameters concerning each wireless link is a QOS performance parameter comprising any one or more of a data transmission delay, and a number of dropped frames.

34. A network as claimed in claim 33, wherein the control means is adapted to drop a data frame transmitted over the poorly performing wireless link.

35. A network as claimed in claim 33, further comprising means for re-transmitting the dropped frame after a delay period.

36. A network as claimed in claim 35, wherein the delay period is a period of random length.

37. A network as claimed in claim 33, wherein the computing means is adapted to maintain a count of dropped frames.

38. A network as claimed in claim 37, wherein the control means is adapted to drop the session if the count of dropped frames exceeds a predetermined threshold.

39. A network as claimed in claim 33, wherein the computing means is adapted to compute a probability respecting whether the QOS performance parameter is certain to violate a corresponding QOS requirement of a communications session on the link.

40. A network as claimed in claim 39, wherein the control means is adapted to preemptively drop a data frame being transmitted over the poorly performing wireless link.

41. [AMENDED] A base station in a wireless data communications network, the base station being adapted for bi-directional data communications with each one of ~~one or more~~ a plurality of wireless terminals over respective bi-directional wireless communications links, the base station comprising:

a) computing means for identifying a poorly performing wireless link; and

b) control means for at least temporarily interrupting bidirectional data transmission over the poorly performing wireless link.

42. A base station as claimed in claim 41, wherein the computing means comprises means for monitoring one or

more performance parameters related to each wireless link, and comparing each monitored performance parameter to a respective predetermined tolerance.

43. A base station as claimed in claim 42, wherein the one or more performance parameters related to each wireless link are based on any one or more of a quality-of-service (QOS), and interference on the link.

44. A base station as claimed in claim 43, wherein at least one of the performance parameters related to each wireless link is based on interference on the link, and comprises any one or more of: a signal-to-noise (S/N) ratio; a user data throughput rate; a carrier-to-interference (C/I) ratio; a bit-error-rate (BER); and a number of suspended frames.

45. A base station as claimed in claim 44, wherein at least one of the performance parameters related to each wireless link comprises an average, taken over a number n of successive bursts, of any one or more of the S/N ratio; the C/I ratio; the user data throughput rate; and the BER.

46. A base station as claimed in claim 44, wherein the control means is adapted to suspend transmission of a data frame over the poorly performing wireless link.

47. A base station as claimed in claim 45, wherein the computing means is further adapted to maintain a count of a number of suspended frames.

48. A base station as claimed in claim 47, wherein the control means is adapted to suspend a communications session over the link if the count of suspended frames exceeds a predetermined threshold.

49. A base station as claimed in claim 43, wherein at least one of the performance parameters related to each wireless link is a QOS performance parameter comprising any one or more of a data transmission delay, and a number of dropped frames.

50. A base station as claimed in claim 49, wherein the control means is adapted to drop a data frame transmitted over the poorly performing wireless link.

51. A base station as claimed in claim 49, wherein the computing means is adapted to maintain a count of dropped frames.

52. A base station as claimed in claim 51, wherein the control means is adapted to drop the session if the count of dropped frames exceeds a predetermined threshold.

53. A base station as claimed in claim 49, wherein the computing means is adapted to compute a probability respecting whether the QOS performance parameter is certain to violate a corresponding QOS requirement of a communications session on the wireless link.

54. A base station as claimed in claim 53, wherein the control means is adapted to preemptively drop a data frame being transmitted over the poorly performing wireless link.